2554

Family Peristediidae

The deep-water Gurnards

Body fusiform, elongate. Head large, bony. Mouth small, inferior, resembling that of sturgeon. Lower jaw with barbels. No teeth. Each preorbital produced into a long flat lobe, projecting more or less beyond mouth. Gill rakers slender. Gill membranes separate, narrowly joined to isthmus anteriorly. Air bladder simple. Pyloric coeca about 10. Body covered with bony plates, each armed with strong spine. Dorsal fin continuous or divided. Pectorals short,

dorsal, without dark base and edge narrowly bright blue. Caudal slate, without white tip but white band across base. Pectoral slate, tips somewhat olive yellow. Ventral slate, with slight yellowish dash at tips of last rays.

19374. Beach near Cariholo River, Ulugan Bay, Palawan Island. December 29, 1908. Length 48 mm.

8956. Between Paron Point and Jesus Point. June 21, 1909. Length 217 mm.

8035 [1170]. Capulaan Bay, Pagbilao Island, Luzon. February 24, 1909. Length 225 mm. Body with alternate brown and paler longitudinal lines.

with 2 lowermost rays detached. Ventral with spine and 5 rays, separated by broad flat area. Color usually red.

Deep-sea fishes, somewhat resembling young sturgeons, with greatly enlarged head, and the large bony plates enclosing the body suggestive of certain armored cat fishes. The detached pectoral rays are tactile organs and function in probing about the bottom, while in search of food.

Printed

Gargarinum frontocephalum (Chmiel)
Penitedion undulatum Weber
1913 = Gargarinum dentidentatum
H. M. Smith 1917, both to fall
with Peritethidion
frontocephalum Chmiel 1986
Type & other Ph. material.
Hemiodus philippinus H. M. Smith 1917
Type & other Ph. material

2556

Peristediidae

Analysis of Genera

a.' Gargariscinae new subfamily. Upper jaw with teeth, lower toothless.

b.' Cephalic shield greatly expanded, edge crenate; barbels well developed. Gargariscus.

b.² Cephalic shield little expanded, edge entire; barbels short and few. Hemiodus.

a.² Peristediinae. Both jaws toothless.

c.' No supra-preopercular spine.

d.' End of preopercle obtuse, without spine. Peristedion.

d.² Preopercular spine developed. Acanthoperistedion.

c.² Supra-preopercular spine.

e.' Barbel short or moderate: Acanthoperistedion.

e.² Barbel very long, reaches anal fin. Themaperistedion.

c.[2] A smaller supra-preopercular spine present as well as longer usual spine. Cephalacanthus lepidus.

Analysis of Species

a.' Mental barbels present.

b.' Rostral extensions spineless; dorsal spines 8.

c.' Supraorbital and occipital spines lower; snout shorter; upper detached pectoral ray reaches vent.

d.' Infraorbital depth to ridge of suborbital stay $\frac{3}{5}$ of eye. orientale.

d.² Infraorbital depth to ridge of suborbital stay equals eye. midstrazhi.

d.³ Eye $1\frac{1}{5}$ in infraorbital depth. fucturatum.

c.² Supraorbital and occipital spines higher; snout long; upper detached pectoral ray reaches front of anal. amblygenys.

b.' Small spine on upper basal surface of each rostral extension; dorsal spines 6. rivers-andersoni.

a.[2] No mental barbels; dorsal spines 8. Liorhynchus.

2-538

Genus *Gargariscus* H. M. Smith

Gargariscus H. M. Smith, Proc. Biol. Soc. Washington, vol. 30, p. 145, July 27, 1917. (Type *Gargariscus semidentatus* H. M. Smith, orthotypic.)

differs from *Peristedion* in the more expanded cephalic shield and its edge deeply crenated. Premaxillaries bearing a broad band of fine teeth extending from symphysis half way to angle of mouth. Barbels very highly developed. Mouth moderate.

Gargariscus

Peristedion prionocephalum Dumériil

thi

Peristedion prionocephalum Dumériil,
Nouv. Arch. Mus. Hist. Nat., Paris,
vol. 4, p. 115, 1868 (type locality,
" mer des Indes
→ Meyer, Ann. Mag. Nat. Hist.,
London, ser. 4, vol. 15, p. 378 XX, 1875
(types from Gorantalo, Celebes);
→ Weber, Siboga Exped., vol. 57,
p. 513, 1913 (reference
Peristedion prionocephalus

Peristethus prionocephalum

Anal. Soc. Españ. Hist.
Nat., Madrid, vol. 14, p. 28,
1885 (North Celebes).

& Peristelhidion prionocephalum Dumériil,
op. cit., pl. 23 (upper and lower views).

2560

Peristedion undulatus Weber,
Siboga Exped., vol. 57, Fische, p.
513, pl. 2, figs. 5–5a, pl. 9, fig. 4,
1913 (type locality, Flores Sea,
in 521 to 538 m.).

Gargariscus semidentatus

H. M. Smith, Proc. Biol. Soc. Washington, vol. 30, p. 146, July 27, 1917 (type locality, Mindanao Sea, in 169 fathoms).

depth 4 1/3 to 4 2/3 (measured from snout tip inside rostral extensions); head 2 1/4 to 2 1/2, width equals or 1 1/8 times its length. Snout — 2 1/8 to 2 1/4 in head; eye 4 1/8 to 5 1/2, 1 4/5 to 2 2/5 in snout; 1 to 1 1/8 in interorbital; maxillary reaches 2/3 to eye, length 3 1/8 to 3 1/5 in head; mouth width 2 3/5 to 2 2/3; barbel 1 2/5 to 1 3/5, with 8 pairs of filaments; pair of ~~barbels~~ filaments at chin, one each side of mandibular symphysis, then row of 4 more-and close behind median pair another pair, also 2 ~~barbs~~ filaments on inner edge of each mandibular ramus; broad band of very minute villose like teeth in upper jaw; palate

toothless; interorbital 4 1/5 to 4 1/4 in head, broadly depressed concavely. Gill rakers 4+12, of which 4 above and 5 below mere rudiments; length 2 4/5 in eye; gill filaments 4/5 of gill rakers.

Pair of broad, flat, expanded rostral extensions, narrowing slightly basally, length 1/2 in eye to 1 1/8 times eye, narrow interspace 1 3/5 to 2 1/2 in length of extension; 2 pairs of wide set internasal spines, pair between each pair of nostrils; median strong rostral spine at last third in snout; moderate each side postero-supraorbital spine 1; pair of large, strong, erect

occipital spines; large obtuse spine on infraorbital below eye; marginal broad keel of suborbital stay with 4 lobes, expanded and broad, each lobe rounded and 2 posterior much larger; strong preopercle spine flat, directed back, $1\frac{1}{2}$ in eye to $1\frac{1}{2}$ times eye; broad supra-scapular spine with keel, opercular spine level with lower edge of eye, with keel forward, $1\frac{1}{5}$ to $1\frac{1}{5}$ times eye.

From above gill opening 25 + 1 bony lateral plates; 4 rows of diminishing spiniferous plates on trunk and tail; spines all large, strong, broad, and surfaces of plates rugose striate; plates

on belly before vent 2 in length of front pair; row or arc of 5 small plates, each with spine over upper hind part of gill opening.

D. VII, 14, fifth spine $1\frac{1}{5}$ to $3\frac{1}{3}$ in head, seventh ray $1\frac{2}{5}$ to $3\frac{1}{3}$; A. 14, fifth ray 2 to $4\frac{1}{5}$, caudal $2\frac{2}{5}$ to 3, slightly convex behind; least depth of caudal peduncle 2 in eye; pectoral $1\frac{3}{4}$ to $2\frac{3}{5}$ in head, rays I, 12 — II, upper of lower detached rays $1\frac{1}{2}$ in fin; ventral $1\frac{4}{5}$ to $1\frac{7}{8}$ in head, rays I, 5.

Brown above, paler on whitish beneath. Body clouded with dark above, in young as about 5 dark transverse

bands. Dorsals and pectorals with blackish brown on membranes, more or less pure black terminally. Upper and lower edges of caudal dark brown. Ventral with brown on outer surface. In young first dorsal with black apex and pectoral with 4 or 5 rows of large round black spots.

U. S. N. M., No. 78249. Albatross Collection D. 5517. Point Tagolo Light, S. 83° W., 10.5 miles (N. lat. 8° 45' 30", E. long. 123° 33' 45"), northern Mindanao and vicinity. In 169 fathoms. August 9, 1909. No. 10122-Length 228 mm. Type.

17860. D. 5409. Capetancillo Light, N. 19° W., 22 miles (N. lat. 10° 38', E. long. 124° 13' 8"), between Cebu and Leyte. 3m 189 fathoms. March 18, 1909. Length 195 mm.

2657. D. 5472. Corregidor Light, N. 26° E., 25.50 miles (N. lat. 14°, E. long. 120° 22' 30"), China Sea vicinity southern Luzon. 3m 118 fathoms. July 14, 1908. Length 142 mm.

10278. D. 5626. Kayoa Island (S.E.), S. 5° W., 6.7 miles (N. lat. 0° 7' 30", E. long. 127° 29' 0"), between Gillolo and Kayoa Islands. 3m 265 fathoms. November 29, 1909. Length 187 mm.

4168. D. 5411. Lapis Point Light, N. 35° E., 4.7 miles (N. lat. 10° 10' 30", E. long. 123° 51' 15"), between Cebu and Bohol. 3m 145 fathoms. March 23, 1909. Length 160 mm.

1915. D. 5417. Luis Point Light, N. 10° E., 3.5 miles (N. 10° 10', E. long. 123° 53' 15"), between Cebu and Bohol. 3m 165 fathoms. March 25, 1909. Length 186 mm.

1548. D. 5418. Luis Point Light, N. 16° E., 5.6 miles (N. lat. 10° 8' 30", E. long. 123° 52' 30"), between Cebu and Bohol. 3m 159 fathoms. March 25, 1909. Length 194 mm.

2863. D. 5367. Malabrigo Light, N. 81° E., 8 miles (N. lat. 13° 34' 37", E. long. 121° 7' 30"), Verde Island Passage. 3m 180 fathoms. February 22, 1909. Length 180 mm.

10123, 10125. D. 5517. Point Tagolo Light, S. 83° W., 10.5 miles (N. lat. 8° 45' 30", E. long. 123° 33' 45"), northern Mindanao and vicinity. 3m 169 fathoms. August 9, 1909. Length 200 to 220 mm.

2093. D.5117. Hombrero Island S. 17° E., 10.80 miles (N. lat. 13°52' 22", E. long. 120°46'22"), Balayan Bay and Verde Island Passage. In 118 fathoms. January 21, 1908. Length 70 mm.

2570

Genus Heminodus H. M. Smith

Heminodus H. M. Smith, Proc. Biol. Soc. Washington, vol. 30, p. (145-) 146, July 27, 1917. (Type Heminodus philippinus H. M. Smith, orthotypic.)

Cephalic shield little expanded, the margin entire. Rostral extensions short and spine-like, not flattened; barbels short and few. Mouth very large. Teeth on premaxillaries on a broad band extending to angle of mouth.

2571

Heminodus philippinus H. M. Smith

Heminodus philippinus H. M. Smith, Proc. Biol. Soc. Washington, vol. 30, p. (145) 146, July 27, 1917 (type locality, Mindanao Sea off Tawi-Tawi, to 277 fathoms).

Depth 4 3/4 to 5 (measured from snout tip inside rostral extensions); head 2 1/4 to 2 1/3, width 1 2/5. Snout 2 1/5 in head; eye 4 to 4 1/2, 2 in snout, equals interorbital; maxillary reaches 9/10 to eye to 1/3 in eye, length 1 7/8 to 2 1/10 in head; mouth width 2 to 2 1/4; barbel small, simple filament, 4 3/5 to 5 1/8 in head, with 1 or 2 short filaments; short filament each side of mandibular symphysis; upper jaw its whole length with band of fine, simple, conic, small or villiform teeth, of 5 irregular series anteriorly; no lower teeth or none on palate; interorbital 3 7/8 to 4 1/2 in head, rather evenly

and deeply concave. Gill rakers 5+17, of which 3 above and 8 below short rudiments; length 3 1/4 in eye or 1/2 of gill filaments.

Pair of short, flat, triangular rostral extensions, 1/3 of eye and 3/5 of wide interspace, which 1 1/4 in eye; strong, low postero-orbital supraorbital spine each side; pair of large, erect, high, occipital spines, especially in young; postocular keel end in rath strong, small, supracapular spine, 1/5 to 1/5 in eye; rather small opercular spine level with lower edge of eye, 1/4 to 1/3 in eye; edge of suborbital stay moderately trenchant, with very broad,

blunt or obtuse point opposite from edge of eye and another opposite hind edge of eye, and long slender preopercular spine equals eye to 1 1/3 times eye and reaches 1/8 to 1/4 in pectoral fin.

From above gill opening 27 to 29 + 2 bony lateral plates; 4 rows of diminishing spiniferous plates on trunk and tail; spines all triangular, rather slender, little curved, sharp pointed, and surfaces rugose striate; hind pair of plates on belly before vent 1 4/5 in front pair; arc of 5 small plates over and behind gill opening, each furnished with small spine.

D. VII, 19 or 20, second spine $3\frac{1}{3}$ to $3\frac{2}{3}$ in head, third ray 4 to $4\frac{2}{5}$; A. 18 or 19, third ray $4\frac{7}{8}$ to 5; caudal $2\frac{5}{6}$ to 3, slightly emarginate behind, truncate or little convex in young; least depth of caudal peduncle 3 in eye; pectoral $2\frac{1}{8}$ to $2\frac{1}{4}$ in head, rays I, 13–II, upper of 2 lower detached rays 1 to $1\frac{1}{8}$ in upper section of pectoral; ventral $2\frac{1}{2}$ to $2\frac{3}{4}$ in head, rays I, 5.

Brown, paler to whitish below. Head above and back various small dark brown bars, dots, specks and spots, mostly in grooves of striae. Iris brownish or pale. Large dark brown blotch on apex of

first dorsal, black in young.
Caudal medially and basally
with brown. Pectoral
brownish terminally and broad
dark transverse blotch medially,
also small brown subbasal blotch.
Fins otherwise all more or less
pale to whitish.

Philippines. Known by its
very large mouth, toothed
upper jaw, the small barbel
and small, short, wide set
triangular roxtral extensions.

24264. D. 5576. Lt. Dromedario, S. 22° W., 17.2 miles (N. lat. 5°25' 56", E. long. 120°3'39"), north of Tawi Tawi. In 277 fathoms. September 23, 1909. Length 105 mm.

3105. D. 5516. Point Tagolo Light (Mindanao), S. 80° W., 9.7 miles (N. lat. 8°46', E. long. 123°32' 30"), northern Mindanao and vicinity. In 175 fathoms. August 9, 1909. Length 175 mm.

U. S. N. M., No 78250. D. 5517. Point Tagolo Light, S. 83° W., 10.5 miles (N. lat. 8°45'30", E. long. 123°33'45"), northern Mindanao and vicinity. In 169 fathoms. August 9, 1909. No. 4261. Length 168 mm. Type.

2578

Genus Peristedion Lacépède

Peristedion Lacépède, Hist. Nat. Poiss., vol. 3, p. 368, 1802. (Type Peristedion malarmat Lacépède. = Trigla cataphracta Linnaeus. Designated by Jordan and Gilbert, Bull. U. S. Nat. Mus., No. 16, p. 732, 1883.)

Peristethion Oken, Lehrb. Naturg., vol. 3, pt. 2, p. 113, 1816. (Type ~~Peristedion~~ Trigla cataphracta Linnaeus.)

Perustethium Minding, Lehrb. Naturg. Fische, p. 104, 1832. (Type Trigla cataphracta Linnaeus.)

Peristhedion Oken, Allgem. Naturg., vol. 10, No. 6, p. 180, 1836. (Type Trigla cataphracta Linnaeus.)

Peristethidum Agassiz, Nomencl. Zool., Index Univ., p. 280, 1846. (Type Trigla cataphracta Linnaeus.)

Peristethus Kaup, Archiv. Naturg., vol. 24, pt. 1, pp. 332, 336, 1858. (Type [illegible] Trigla cataphracta Linnaeus.) (Peristethus Kaup proposed to replace Peristedion Lacépède.)

Peristedium Jordan and Gilbert, Bull. U. S. Nat. Mus., No. 16, p. 732, 1882. (Type Trigla cataphracta Linnaeus.)

2580

Octonus Rafinesque, Indice
Ittiol. Sicil., pp. 29, 54, 1810.
(Type Octonus oloste on Rafinesque
= Trigla cataphracta Linnaeus,
monotypic.)
Polyacanthichthys Kaup, Archiv
Naturg., vol. 39, pt. 1, (p. 82.) 1873,
(Type Peristedion orientale Schlegel,
monotypic.)

Steindachner, Sitzs. Ber. Akad. Wiss. Wien, math.-naturw. Kl., vol. 53, pt. 1, p. 443, 1866 (Port Jackson). — Schmeltz, Cat. Mus. Godeffroy, no. 2, p. 6, 1865 (South Seas); no. 3, p. 8, 1866 (South Seas). — Pohl, Cat. Mus. Godeffroy, no. 10, p. 32, 1884 (South Seas). — Quilby, Edible Fish. New South Wales, ~~p. 14, pl. 79, 1908.~~ — p. 109, pl. 29, 1893. — Stead, Edible Fish. New South

Panichthys Whitley, Rec. Austral. Mus., vol. 19, p. 97, 1933. (Type Peristedion picturatum Inc Cullock, orthotypic.)

Head parallelopiped in form, upper surface and sides encrassed with bone. Barbels present, minute and simple to large fringed tufts at mouth angle and on lower jaw. Pseudobranchiae present. Branchiostegals 7. Head usually with 2 variable rostral extensions in front. Body covered with bony scale like plates. Soft dorsal more developed than first dorsal.

2583

Peristedion orientale Schlegel

Peristedion orientale Schlegel,
Fauna Japonica, Poiss., p. t.
(trea ch.)
p. 37, pl. 14, figs. 5–6, pl. 14a,
figs. 1–2, 1843 (type locality,
Japan).

—Jordan and Snyder, Annot.
Zool. Japon., vol. 3, p. 108, 1901
(reference). — Jordan and
Starks, Bull. U. S. Fish Comm.,
vol. 22, p. 593, fig., 1902 (1904
Ose Point, Suruga Bay; Musabi;
Atami; 64 to 125 fathoms). —
Jordan and Richardson, Proc.
U. S. Nat. Mus., vol. 33, p. 660, 19
(Musabi; Tokyo; Tokyo Bay;
Ose Point).

— Franz, Abhandl. Bayer. Akad.,
vol. 4, Suppl. Band 1, p. 80, 1910
(Sagami Bay; Aburatsubo).

Peristethidion orientale Sauvage,
~~Peristhet~~ Nouv. Archiv. Mus. Hist. Nat.,
Paris, vol. 4, p. 112, 1868 (compiled).

Peristethus orientale Ishibawa
and Matsuura, Cat. Fish. Mus.
Tokyo, p. 47, 1897.

Depth 6 1/2 to 6 3/5; head 2 3/5 to 2 2/3; width 2 1/5 to 2 1/4. Snout 1 2/5 in head; eye 4 4/5 to 5 5/5, 3 to 3 1/3 in snout; subequal with interorbital; barbel reaches eye, length 3 2/3 in head, well branched, and short filaments along lower jaw; maxillary reaches 3/4 in snout. Rostral extension slightly divergent, length 3 3/4 to 4 1/5 in head, and terminal interspace sometimes almost twice basal interspace. Pair of obtuse posterosupraorbital spines and pair of blunt occipital spines, snout and forehead spineless. Lateral ridge distinct, narrow, edge little uneven from base of pectoral extension to preopercle angle, which obtuse. Opercle with blunt spine, ridge anteriorly finely serrated.

Scutes 34 or 35 in lateral line, each ending in spine, 4 transversely.

D. VIII, 20, second spine 4 to 4 1/8 in head, second ray 3 7/8 to 4; A. 20, sixth ray 4 1/5; caudal 3 1/8, slightly concave behind; least depth of caudal peduncle 2 4/5 in eye; pectoral 2 2/3 to 2 4/5 in head, upper detached ray 2 1/5 to 2 1/4; ventral 2 1/8 to 2 1/6.

Pale brown vermiculated and speckled with darker. Lower parts pale or whitish. Dorsals pale, with submarginal row of larger dark spots and another row above base below middle of fin, submarginal row most distinct. Two dark bars across pectoral.

Japan.

U. S. N. M., No. 38813. Ajiro. Japanese Museum. Length 154 mm.

U. S. N. M., No. 70738. Tokyo. D. S. Jordan and J. O. Snyder. Length 193 to 195 mm. Two examples.

U. S. N. M., No. 75909. Japan. P. L. Jouy. Length 160 to 174 mm. Two examples.

Peristedion mierstraszi Weber

Peristedion mierstraszi Weber, Siboga Exped., vol. 57, p. 514, pl. 5, figs. 1, a–b, 1913 (type locality, Flores Sea, 521 to 538 m.).

Depth 7; head 2 2/5, width 1 7/8. Snout 1 7/8 in head; eye 4 1/3, 2 1/4 in snout, greater than interorbital; barbel 3 1/2 in rest of head, would reach front of eye; interorbital 7 2/5, Rostral extensions parallel, rather acuminate, 1/10 in rest of snout; interspace wide as basal expansion of either of extensions. Strong preorbital ridge to base of each rostral extension. Postero-supraorbital spine present, followed by two broader spines each side of occiput. Preopercle ends very broadly obtuse point, hardly spine, though ridge forward to that of suborbital stay distinct.

Scutes 34 in lateral line, each spine with only 1 point which directed back. Anterior ventral

plates $1\frac{3}{4}$ times posterior pair.

D. VIII, 21, first spine 5 in head, fourth ray $5\frac{1}{5}$; A. 21, third ray $4\frac{3}{4}$; caudal $3\frac{1}{6}$, subtruncate; least depth of caudal peduncle $2\frac{1}{4}$ in eye; pectoral 3 in head, upper detached ray $2\frac{1}{3}$, rays 11 – II; ventral $2\frac{3}{5}$.

Yellowish, with obscure dark reticulations above. Edges of dorsals and upper caudal edge, black. Pectoral with broad dark, terminal cross band and basally narrow dark cross band. Length 152 mm. (Weber)

Flores Sea.

Peristedion picturatum McCulloch

Peristedion picturatum McCulloch, Biol. Res. Endeavour, vol. 5, f. 212, pl. 56, figs. 1–2, June 8, 1926 (type locality, East of Flinders Island, Bass Strait, in 70 to 100 fathoms). Austral. Mus. Mem., no. 5, pt. 3, p. 396, Nov. 28, 1929 (reference).

Peristedion (Panichthys) lingi Whitley, Rec. Austral. Mus., vol. 19, no. 1, p. 97, Aug. 2, 1933 (type locality, S.E. by E. from South Head of Sydney Harbour, in 85 to 90 fathoms).

Depth 6 2/5; head 2 3/5, width 1 3/5. Snout 1 3/4 in head; eye 9, 3 7/8 in snout, 1/2 in interorbital, maxillary not nearly reaching eye; lower lip with many tentacles last than eye, long branched tentacle reaches front edge of eye; interorbital 5 2/3 in head, with deep median groove. Rostral extension parallel, length 1/5 in snout to orbit, wide per basal width only slightly less than interspace, each extension with small spine near base on upper surface. No spines on forehead or upper surface of snout. Postero-supraorbital spine, followed by 2 more each side of occiput, and nodular ridge little lower each side and ends in spine above post-temporal; opercle with transverse ridge projecting

back at small spine. No preopercular spine.

Scutes 36 on lateral line. Two pairs of large ventral plates, and length of posterior $\frac{2}{3}$ of anterior.

D. VIII, 21, first spine $4\frac{1}{8}$ in head, fourth ray $4\frac{2}{5}$; A. 20, fifth ray $5\frac{2}{3}$; caudal $2\frac{4}{5}$, little emarginate behind; least depth of caudal peduncle $\frac{1}{2}$ in eye; pectoral 3, upper detached ray $2\frac{7}{8}$, rays 12—II, ventral rays I, 5, fin $2\frac{1}{3}$ in head.

Apparently pink in life, with brown markings on upper surfaces. Both dorsals with broad black margins, tips of spines and rays white, anal with dark submarginal band posteriorly. Caudal with dusky upper border. Pectoral

with broad black bar covering
its terminal half, and small
dusky blotches near base.
Length 159 mm. (McCulloch.)

Bass Strait.

Penitella gumbleyana

24314. D. 5512. Camp Overton Light, S. 76° E., 14 miles (N. lat. 8°16'2", E. long. 58'26"), northern Mindanao and vicinity. In 445 fathoms. August 7, 1909. Length 89 mm.

24306 to ~~24315~~

24324. D. 5121. Malabrigo Light, N. 14° W., 9 miles (N. lat. 13°27'. 20", E. long. 121°17'45"), east coast of Mindoro. In 108 fathoms. February 2, 1908. Length 82 & 100 mm.

24250 to 24252. D. 5372. Tabayas Light (outer), N. 3° W., 4.5 miles (N. lat. 13°49'12", E. long. 121°36'9"), Marinduque Island and vicinity. In 150 fathoms. February 24, 1909. Length 70 to 124 mm.

One example 103 mm.. [34].
One example, without data,
99 mm.

(ἀμβλύς obtuse + γένυς cheek;
with reference to the obtuse
preopercle.)

Peristedion rivers-andersoni Alcock

thus

Peristedion rivers-andersoni Alcock,
Journ. Asiatic Soc. Bengal, vol. 68, pt. 2, p.
121, pl. 6, fig. 2a-b, 1894 (type locality:
Off Colombo, in 142 to 400 fathoms);
Peristethium rivers-andersoni Alcock,
Cat. Deep Sea Fish. Indian Mus.,
p. 168, 1899 (type).
Peristedium rivers-andersoni Garman,
Mem. Mus. Comp. Zool., vol. 24, p. 387, 1899
(reference).
Brauer, Deutsch. Tiefsee. Exped.
Valdivia, vol. 15, Fische, p. 297, (402), 1906
(S. lat. 0° 27' 4", E. long. 42° 47' 3", 630 m.; S. lat. 0° 29' 3",
E. long. 42° 47' 0", 977 m., East Africa).
Weber, Siboga Exped., vol. 57, p. 513,
1913 (reference).
Peristedion rivers-andersoni
vol. 65, pt. 2, p. 320, 1896 (~~off Colombo~~ type).

? Peristedion gracile (not Goode and Bean) Gilchrist and Von Bonde, Fisher. Fish. Marine & Biol. Surv. South Africa, ~~no~~ Rep. No. 3, p. 22, 1924 (off Delagoa Bay, 260 fathoms). — Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 945, Oct. 1927 (copied).

? Peristedion weberi J. L. B. Smith, Trans. Roy. Soc. South Africa, vol. 22, p. 329, pl. 21 (photograph), 1934 (type locality, Off Delagoa Bay, in 260 fathoms).

Lower jaw thickly fringed with small tentacles. Long labial tentacles when laid back hardly surpass angle of mouth. Preopercle ridge salient, sharply truncated, spineless. Opercle ridge with short blunt spine. Interorbital equals orbit, deeply concave, traversed fore and aft by deep median groove. Each supra-orbital margin surmounted posteriorly by strong, recurved spine, and similar spine each side of occiput. Narrow subspatulate rostral extension nearly equals space between its base and front border of orbit, and each on upper surface near base recurved, upstanding spine.

Lateral shields 32, in 4 rows transversely, each strongly carinated and carina ends

behind in strong spine; shields of hind third of lateral line with carinae slightly extended and pointed in front also. Length of anterior ventral shields more than twice their greatest width.

D. VI, 22; A. 21.

Body flesh colored. Spinous dorsal with upper half black. Soft dorsal with black edge. Pectorals with broad, jet black band in hind half and tip milk white. Length 88 mm.

(Alcock)

Ceylon.

Peristedion liorhynchus (Günther)

Peristethus liorhynchus Günther, Proc. Zool. Soc. London, p. 663, pl. 62, 1871 (type locality, Manado, Celebes); Rep. Voy. Challenger, vol. 1, pt. 6, p. 56, 1880 (Jares Harbor, Admiralty Island, 152 fathoms); vol. 22, p. 65, 1887 (type; Admiralty Islands). Peristedium liorhynchus Garman, Mem. Mus. Comp. Zool., vol. 24, p. 387, 1899 (reference). Peristedion liorhynchus Weber, Siboga Exped., vol. 57, p. 513, 1913 (reference). — Fowler, Mem. Bishop Mus., vol. 10, p. 302, 1928 (copied).
— Meyer, Anal. Soc. Españ. Hist. Nat., Madrid, vol. 14, p. 28, 1885 (Manado).

Head 2 3/4; width 1 3/4 in its length. Snout 2 in head; eye 5 1/8, 2 2/3 in snout, subequal with interorbital; maxillary would reach 4/5 to eye, length 3 3/4 in head; apparently no barbels; interorbital 5 1/3, concave. Rostral extensions slightly converge, little tapering, 1 3/4 in rest of snout to orbital, interspace slightly more than base of either extension; snout and forehead without spines; preopercular ridge not ending in spine.

Scales 34 in lateral line. Anterior abdominal scutes broader than long and length of posterior 3/5 length of anterior.

D. VIII, 18; A. 21; caudal 3 4/5 in head, slightly emarginate behind; least width of caudal

peduncle 3 in eye; pectoral length
½ ¼ in head, uppe detached
ray 2; ventral 2.

Red, coursely reticulated
with blackish. Dorsal, anal
and pectoral with black edges.
Length 208 mm.
East Indies. (Günther.)

2610

Genus Xatyrichthys Kaup

Xatyrichthys Kaup, Archiv Naturg., vol. 39, pt. 1, p. 82, 1873.
(Type Peristethus rieffeli Kaup, monotypic.)

Differs from Peristedion chiefly in the well developed preopercular spine. Barbels short or small.

Leioperistedion new subgenus

Type Peristedion amblygenys n.

new species.

Easily known by the absence of the preopercular spine. Upper detached pectoral ray long.

(λεῖος smooth + Peristedion; with reference to the blunt preopercle not bearing a spine.)

Analysis of species

a.' Dorsal rays 17 to 22, anal rays 20 to 21.

b.' Vertical fins without dark margins. unpigmented.

b.² Edges of vertical fins and outer half of pectoral black.

c.' Scales of last third in course of lateral line with an anterior and posterior denticle to each spine. serrulatum.

c.² Scales of entire lateral line with simple spine directed backward.

d.' Rostral extension broad, short, triangular, width of either greater than interspace. investigatoris.

d.² Rostral extension longer, fusiform, somewhat oblong.

e.' Rostral extension 1/5 to 1/2 as long as rest of snout to eye: indicum.

e.² Rostral extension 2/6 as long as rest of snout to eye. murrayi.

D. Dorsal rays 12; anal rays 8. welchi.

a.^{1} Dorsal rays 16 or 17; anal rays 16 to 18.

f.^{1} Rostral extension triangular, $\frac{1}{2}$ of snout.

g.^{1} Preopercular spine without external prebasal small spine. moluccensis.

g.^{2} Preopercular spine with small external prebasal spine. tigrecaia.

f.^{2} Rostral extension long, slender, rather narrow, $\frac{3}{4}$ of snout. rieffeli.

a.^{3} Dorsal rays 14 or 15; anal rays 15.

h.^{1} Scales 35 in lateral line. kalei.

h.^{2} Scales 25 in lateral line. adeni.

h.^{1} 6 rows $2\frac{3}{4}$ mm. apart; barbel short. tuberculifer.
h.^{2} 6 rows $3\frac{1}{8}$ mm. apart; barbel filiform.

~~Acanthop~~ Satyrichthys

~~Peristedion~~ engyceros (Günther

Peristethus engyceros Günther,
Proc. Zool. Soc. London, p. 663,
fig. (head above), 1871 (type
locality, Hawaiian Islands);
Journ. Mus. Godeffroy, vol. 6, pt.
11, p. 168, fig. (head above), 1877
(type).

Peristedion engyceros Gilbert, Bull.
U. S. Fish Comm., vol. 23, pt. 2, p. 639,
1903 (1905) (off Oahu; Laysan;
Kauai; Maui; 35 to 362 fathoms).
— Weber, Siboga Exped., vol. 57,
Fische, p. 513, 1913 (reference).
— Jordan, Proc. U. S. Nat. Mus.,
vol. 59, p. 654, fig. 7, 1921 (Hawaii).

— Jordan and Jordan, Mem. Carnegie Inst., vol. 10, no. 1, p. 56, dec. 1922 (cast in Bishop Museum).

— Fowler, Mem. Bishop Inst., vol. 10, ~~1919~~ p. 302, pl. 36 a, 1928 (Honolulu, Kau, Hawaii; Mauna Loa flow 1919); vol. 11, no. 6, p. 431, 1934 (Hawaii).

Peristedium engyceros Brauer, Deutsch. Tiefsee-Exped. Valdivia, vol. 15, Fische, p. 402, 1906 (reference).

Peristedion gilberti Jordan, Proc. U. S. Nat. Mus., vol. 59, p. 655, fig. 1, 1921 (1922) (type locality, Hawaii).

depth 5 3/4 to 6; head 2 1/5 to 2 3/4, width 1 4/5 to 2. Snout 1 3/4 to 2 in head; eye 6 3/5 to 8, 3 to 4 2/5 in snout, greater than interorbital; maxillary reaches front eye, edge of rostral fenestration, length from inner front end 2 3/5 in head; mouth toothless; large mandibular barbel laid back reaches ventral origin, on inner edge with series of smaller filaments, mostly in pairs; 7 small barbels along each side of mandible; interorbital 8 to 10 in head, deeply concave. Gill rakers 5 + 1 6, several front lower ones rudiments.

Rostral extensions slender, parallel, nearly of equal width throughout, length along inner edge 1 1/2 to 1 3/5 in snout, interspace 1 1/5 to 1 1/2 in their length, head finely

roughened above, snout with 6 to 8 hooked spines; young usually with 2 preorbital spines, absent with age; supraorbital rim denticulate; small postocular spine and stronger one at end of occipital ridges; preopercular spine long at age.

D. VII, 20 or 21, second spine 3 1/4 to 3 2/5 in head, third ray 3 1/5 to 3 1/4; A. 20 or 21, eighth ray 3 4/5 to 4; caudal 2 3/5 to 2 4/5, little emarginate behind; least depth of caudal peduncle 1 1/2 to 2 in eye; pectoral 1 2/3 to 2 in head, rays 13, ~~uppermost four~~ upper detached ray 1 1/2 to 1 3/5; ventral 2 to 2 4/5.

In life pink or red, with deep tints in junctures of plates or sutures of bones. Some specimens with dark dots above. ~~Entopth~~

Hawaiian Islands.

U. S. N. M., No. 55733. Hawaii. Bureau of Fisheries. Length 98 to 174 mm. Eighteen examples.

U. S. N. M., No. 55265. Hawaii. Bureau of Fisheries. Length 142 to 159 mm. Five examples.

U. S. N. M., No. 84102. Hawaii. Albatross Collection. Length 144 mm. Type of Peristedion gilberti.

~~Acantho~~ Satyrichthys

~~Peristedion~~ S servulatum (Alcock)

thus

Peristedion servulatum Alcock,

Ann. Mag. Nat. Hist., London, ser.

7, vol. 2, p. 153, 1898 (type locality,

Andaman Sea, in 185 fathoms); Illustrat. Zool.

Investigator, pt. 6, pl. 25, figs. 2-2a, 1899.

Cat. Deep. Sea Fish. Indian Mus.,

p. 269, 1899 (type).

Peristethium servulatum

Peristedium servulatum Garman, Mem. Mus.

Comp. Zool., vol. 24, p. 387, 1899 (reference).

Weber, Siboga Exped., vol. 57, p.

513, 1913 (reference

Peristedion servulatum

Depth 6; head 2 2/5, width 1 7/8.
Snout 1 3/5 in head; eye 5 1/4, 4 1/3
in snout; maxillary reaches 4/5
to eye; interorbital less than
eye, concave. Large labial tentacles
when laid back reach ventral
origin. All bony ridges of
head finely serrulate or serrate.
Rostral extension elongate, narrow,
3 1/3 in rest of head, interspace
1 1/5 in either extension as measured
along inner edge. Five small
spines or dentiles on upper
surface of snout. Antero-supra-
orbital 1, postero-supraorbital 1,
post-temporal 1, occipital 1 and
opercular 1, on each side of
head. Preopercle ridge sharply
serrate, ending in curved,
rather narrow spine, which
nearly long as eye.

Lateral shields 33, each like other body shields with stout recurved spine, and those in posterior third of lateral line acutely extended both forwards and backwards. Anterior ventral plates nearly twice long as broad, and nearly twice long as posterior ventral plates.

D. VII, 22, second spine $5\frac{1}{6}$ in head, second ray $5\frac{2}{5}$; A. 21, second ray 7; caudal $2\frac{4}{5}$, slightly emarginate behind; least depth of caudal peduncle $13\frac{7}{8}$; pectoral $3\frac{1}{3}$, upper detached ray $2\frac{1}{5}$; ventral $3\frac{1}{6}$.

Flesh color, rather dusky dorsally. Edges of vertical fins and terminal half of pectoral blackish. Length nearly 150mm. (Alcock.)

Andaman Sea.

Satyrichthys
~~Acantho~~

~~Peristedion~~ investigatoris Alcock

thus
Peristed~~ion~~ investigatoris Alcock,
Ann. Mag. Nat. Hist., London,
ser. 7, vol. 2, p. 152, 1898 (type
locality, Andaman Sea, in 188 to 220 and
405 fathoms); Illustrat. Zool. Investigator, pt. 6,
pl. 25, fig. 1-1a, 1899.
Cat. Deep Sea Fish. Indian Mus.,
p. 70, 1899 (Andaman Sea, "Travan-
core coast," 220 to 405 m.).

¶ Peristethium investigatoris Alcock,
Peristedium

Brauer, Deutsch. Tiefsee Exped.
Fische
Valdivia, vol. 15, 1, p. 298, 1906 (S. lat.
0°27'4", E. long. 42°47'3" in 638 m.
42°47'6", in 977 m., East Africa).

Weber, Siboga Exped., vol. 57, p.
513, 1913 (reference).

¶ Peristedium investigatoris Garman, Mem. Mus. Comp.
Zool., vol. 24, p. 387, 1899 (reference).
Peristedion investigatoris

depth 6 $\frac{7}{5}$; head 2 $\frac{3}{5}$, width 1 $\frac{2}{5}$. Snout 2 in head; eye 5 $\frac{1}{5}$, 2 $\frac{7}{8}$ in snout; orbit 4 in head, 2 in snout; maxillary reaches $\frac{4}{5}$ to eye; mouth width 2 $\frac{3}{4}$ in head; rostral tentacle would reach pectoral origin; interorbital less than eye, concave. Postero-supraorbital spine; occipital and post-temporal spine each side; rostral extension nearly equilateral triangle, length of 1 $\frac{3}{4}$ of orbit and interspace about $\frac{2}{3}$ length of either extension. Preopercular ridge crenulant, spine $\frac{2}{3}$ of orbit.

Lateral shields 35 or 36, each with stout spine. Anterior ventral plates twice length of posterior.

D. VII, 20, first spine 4 $\frac{1}{5}$ in head, fifth ray 3 $\frac{3}{4}$; A. 21, fifth

ray 5 $\frac{3}{4}$; caudal 2 $\frac{7}{8}$, truncate; least depth of caudal peduncle 11 $\frac{1}{2}$; pectoral 2 $\frac{1}{2}$, ~~ventral~~ upper detached ray 2; ventral 3 $\frac{1}{8}$.

In life adults red, young dusky violet. Terminal half of labial tentacles, first dorsal and pectorals black. Second dorsal with black edge. Length little over 150 mm. (Alcock.)

India.

Lophyrichthys
~~Acantho~~

~~Peristedion~~ indicum Brauer

Peristedion indicum Brauer,
Deutsch. Tiefsee- Exped. Valdivia,
vol. 15, 1 f. 299, 1906 (type locality,
S. lat. ~~4°29'31"~~ 0°27'4", E. ~~4°29'31"~~ long.
42°47'3", in 638 m., off East Africa.

Weber, Siboga Exped., vol. 57,
f. 513, 1913 (reference).

Peristedion indicum

Depth 4 2/5 to 4 1/2 in body (without rostral extensions); head 2 1/2, width 1 1/10 to 1 1/5. Snout 2 1/5 to 2 1/3 in head (without rostral extensions); eye 4 2/5 to 4 3/5, 1 1/2 in snout; large barbel reaches hind edge of head or little beyond; interorbital 1 1/5 in eye. Rostral extensions long, spatulate, converge, length 1 2/5 to 1 1/2 in rest of snout to eye. Small thorn on middle of snout near eyes and 1 or 2 smaller near base of rostral extension. Upon upper posterior part of head ~~behind eye~~ 2 strong spines, 1 behind eye and 1 on opercle. Preopercle ridge finely toothed and ends in long spine.

Scutes 32 or 33 in lateral line, and in last third of course only with posteriorly directed

thorn. First pair of ventral shields twice long as wide, middle pair twice broad as long and third smaller.

D. VII, 19 or 20; A. 20; pectoral 13 or 14—II.

Reddish yellow, dorsal and pectoral fins edged with black.

Length 196 mm. (Brauer.)

Off East Africa.

2637

~~Acantho~~ Satyrichthys

~~Peristedion~~ murrayi (Günther)

Peristethus murrayi Günther,
Rep. Voy. Challenger, vol. 1, pt. 6,
p. 52, pl. 37, fig. A, 1880 (type locality, Banda
Sea); vol. 22, p. 65, 1887 (type);
— Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 320,
1896 (Andaman Sea, 188 to 220 fathoms).
Peristedium murrayi Garman, Mem.
Mus. Comp. Zool., vol. 24, p. 387, 1899 (reference).
Peristedion murrayi Weber,
Siboga Exped., vol. 57, p. 513, 1913
(reference).

2638

Depth 5 1/8; head 2 1/10, width 1 3/5.
Snout 1 2/3 in head; eye 5 1/3, 3 1/4
in snout; subequal with interorbital; maxillary reaches front eye edge; mandibular barbell reaches back far as hind edge of head, with small filaments along its inner edge; interorbital 6 1/2, concave. Rostral extensions wide set, little narrowed basally, length 5 1/5 in head or 2 1/6 in rest of snout, or 1 1/3 in interspace. Snout and forehead without any spines; small posterorbital spine, and 1 on each side of occiput. Preopercular ridge prominent, trenchant, ends in slender spine nearly long as eye.

Scutes 30 in lateral line, each with single spine. Anterior abdominal scutes not much longer

than ~~head~~. broad, nearly equal posterior, which broad as long.

D. VII, 21, second spine 4 4/5 in head, fourth ray 5 7/8; A. 20, fourth ray 7; caudal 3, slightly emarginate behind, least depth of caudal peduncle 3 in orbit; pectoral 2 1/3, upper detached ray 3 1/5, rays I, 12 – II; ventral fit 3 in head.

Red, dorsal fins with blackish margin. Length 200 mm. (Günther).

Banda Sea.

~~Acantho~~ Satyrichthys
~~Peristedion~~ moluccense (Bleeker)

Peristedion moluccense Bleeker, Nat. Tijds. Ned. Indie, vol. 1, p. 20, 1850 (type locality, Banda, Neira); vol. 2, p. 226, 1851 (Banda, Neira); Act. Soc. Sci. Ind. Neerl., vol. 1, no. 5, p. (5) 30, 1856 (Amboina); vol. 2, no. 7, p. 3, 1857 (Amboina). — Weber, Siboga Exped., vol. 57, p. 513, 1913 (reference).

Peristethus moluccense Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 42, 1880 (Arafura Sea); vol. 22, p. 64, 1887 (Ki Island example); Cat. Fish. Brit. Mus., vol. 2, p. 219, 1860 (Amboyna); — Meyer, Anal. Soc. Españ. Hist. Nat., Madrid, vol. 14, p. 28, 1885 (Tabukan, Nangi). — Günther, op. cit.,

2641

Peristethidion moluccense Lauvage, Nouv. Archiv. Hist. Nat., Paris, vol. 4, p. 113, 1868 (compiled).

Peristedion truncatus

Peristethus truncatus

— Günther, Rep. Voy. Challenger, vol. 22, p. 65, 1887 (type).

2473

Peristedium moluccense Garman,
Mem. Mus. Comp. Zool., vol. 24,
p. 387, 1899 (reference).

2-643

Peristedion laticeps Schlegel,
Bijdr., Dierk., Amsterdam, f. 43, pl.
29, 1852 (type locality, Amboina).
= Hoplo

— Steindachner, Sitzbsb. Denkschr.
Gesell., vol. 25, f. 424, 1900 (Ternate).
— Weber, Siboga Exped., vol. 57,
f. 512, 1913 (note
Peristethidion laticeps Sauvage, Nouv. Archiv.
Mus. Hist. Nat., Paris, vol. 4, f. 112, 1868 (compiled).
Peristethus gigas Kaup, Proc. Zool.
Soc. London, f. 106, 1859
(type locality,

Peristethus brevifurcatus Kaup, l.c., f.
107 (on Valentyn, Oud. Ind., vol. 3, f. 363,
no. 55, ; type locality, East Indies).

Rostral extensions rather long, length 3 in space to orbit. Snout above with 3 small spines. Ridge of angle of preopercle ends in strong spine. Each of bony plates between ventral fins nearly broad as long. Scutes 26 in lateral line. D. $\frac{VIII}{=}$, 16; A. 16.

(Günther.)

East Indies.

Penaeus chacunda 2651.

1874, 1875. D. 5247. Dumalag Island (S.), S. 78° W., 3.8 miles (N. lat. 7° 2', E. long. 125° 38' 45"), Gulf of Davao. In 135 fathoms. May 18, 1908. Length 114 to 135 mm.

4477, 4476. D. 5110. Corregidor Light, N. 20° E., 25 miles (N. lat. 13° 59' 20", E. long. 120° 75' 45"), China Sea off Southern Luzon. In 135 fathoms. January 15, 1908 Length 124 to 127 mm.

24180. D. 5503. Macabalan Point Light (Mindanao), S. 31° E., 6.6 miles (N. lat. 8° 36' 26", E. long. 124° 36' 8"), northern Mindanao and vicinity. In 226 fathoms. August 4, 1909. Length 210 mm.

24263. D. 5576. Mt. Dromedario, S. 22° W., 17.2 miles (N. lat. 5° 25' 56", E. long. 120° 3' 39"), north of Tawi Tawi. In 277 fathoms. September 23, 1909. Length 176 mm.

24240. D. 5518. Point Tagolo Light, S. 64° W., 8.7 miles (N. lat. 8° 48', E. long. 123° 31'), northern Mindanao land vicinity. In 200 fathoms. August 9, 1909. Length 194 mm.

24213, 1951 to 1953.

24219. D. 5519. Point Tagolo Light, S. 71° W., 8.7 miles (N. lat. 8° 47', E. long. 123° 31' 15"), northern Mindanao land vicinity. In 183 to 189 fathoms. August 9, 1909. Length 123 mm.

2167, 2168. D. 5523. Point Tagolo. Light, S. 48° W., 6.7 miles (N. lat. 8° 48' 44", E. long. 123° 27' 35"), northern Mindanao land vicinity. August 10, 1909. Length 203 to 213 mm.

1353 to 1355. D. 5179. Romblon Light S. 56° E., 4.5 miles (N. lat. 12° 38' 15", E. long. 122° 12' 30"), vicinity of Romblon. In 37 fathoms. March 25, 1908. Length 125 to 150 mm.

1745. D. 5112. Sombrero Island, S. 18° E., 6.75 miles (N. 13° 48' 22", E. long. 120° 47' 25"), China Sea off southern Luzon. Sn 177 fathoms. January 17, 1908. Length 161 mm.

1746. D. 5113. Sombrero Island, S. 7° W., 9.5 miles (N. lat. 13° 51' 30", E. long. 120° 50' 30"), China Sea off southern Luzon. Sn 159 fathoms. January 17, 1908. Length 188 mm.

1750, 1751. D. 5118. Sombrero Island S. 80° E., 18.90 miles (N. lat. 13° 45' 5", E. long. 120° 30' 30"), Balayan Bay and Verde Island Passage. Sn 394 fathoms. January 21, 1908. Length 163 to 196 mm.

~~1951 to 1953. D. 5518. Sombrero~~

24290. D. 5374. Tayabas Light (outer), N. 9° E., 7.4 miles (N. lat. 13° 46' 45", E. long. 121° 35' 8"), Marinduque Island and vicinity. Sn 190 fathoms. March 2, 1909. Length 143 mm.

2660

~~Acanthopsis~~ ~~Satyrichthys~~

~~Peristedion~~ rieffeli (Kaup)

Peristethus rieffeli Kaup, Proc. Zool. Soc. London, p. 106, pl. 8, fig. , 1859 (type locality.

— Günther, Cat. Fish. Brit. Mus., vol. 2, p. 219, 1860

91 Peristethidion rieffeli

— Duméril, Nouv. Arch. Mus. Hist. Nat., Paris, vol. 4, p. 114, 1868 (China).

Peristedion rieffeli Weber, Siboga Exped., vol. 57, p. 513, 1913 (reference).

depth 4 $\frac{7}{8}$ to 6 (measured from snout tip inside rostral extensions); head 2 $\frac{3}{5}$ to 2 $\frac{3}{4}$, width 1 $\frac{1}{4}$ to 1 $\frac{1}{3}$. Snout 1 $\frac{4}{5}$ to 2 in head; eye 5 to 5 $\frac{2}{3}$, 2 $\frac{2}{3}$ to 3 in snout, 1 to 1 $\frac{1}{5}$ in interorbital; maxillary extends $\frac{2}{3}$ to $\frac{3}{4}$ to eye, length 2 $\frac{3}{5}$ to 2 $\frac{3}{4}$ in head; mouth width 2 $\frac{2}{5}$ to 2 $\frac{3}{4}$; barbel 3 $\frac{1}{4}$, with 6 filaments; rather long filament each side of mandibular symphysis and 2 anteriorly on inner edge of each mandibular rami or flat chin; mouth edentulous; interorbital 4 $\frac{7}{8}$ to 5 in head, deeply concave. Gill rakers 4 + 19, 2 $\frac{1}{5}$ in eye or twice gill filaments.

Pair of long, flattened

rostral extensions, slightly
approximating terminally,
length 2 2/3 — to 2 3/5 in head,
basal width 3/4 to 4/5 width
of interspace basally; moderate
median rostral spine about
last fourth in snout length;
strong, rather low, broad
postero - supraorbital spine
each side; pair of large,
erect, strong occipital spines;
slight keel before supra-
scapular spines which obsolete,
not distinct with age; small,
slender opercular spine,
level with lower eye edge,
with keel forward, long as
eye; edge of keel of suborb-
ital stay slightly uneven,
in young usually 1 or 2 slight

notches before base of pre-
opercular spine, which 1 1/5
to 1 1/4 times eye which reaches
2/5 in pectoral.

From above gill opening
29 + 1 bony lateral plates;
4 rows of diminishing spinif-
erous plates on trunk and
tail; spines all large, strong
and erect, and surfaces
of plates rugosely rough;
hind pair of plates on belly
before vent 2 to 2 1/5 in length
of front pair; row of 3 small
plates, each bearing horizontal
keel ending in short spine,
above gill opening and 3
similar subvertical plates
behind gill opening.

D. VIII, 16 or 17, third spine
3 1/8 to 3 3/5 in head, third ray

3 7/8 to 4 1/8; A. 17 or 18, fifth ray 4 1/3 to 4 3/4; caudal 2 1/8, little emarginate behind; least depth of caudal pedrncle 2 2/5 in eye; pectoral 2 2/5 to 2 1/2 in head, reaches opposite vent, rays I, 11 - II, upper of lower detached rays long as fin; ventral reaches vent, rays I, 5, fin 2 to 2 1/8 in head.

Pale brown, under surfaces paler or whitish. Iris whitish. On upper surface of head and back junctures of scutes with small, irregular, variable dark brown specks or spots, producing speckled appearance. Dorsals pale to whitish, on first fin with scattered, small

contrasted blackish or dark brown round spots, on second fin at 4 or five such spots only on rays. Iris otherwise all more or less whitish.

Philippines, Japan. This species somewhat variable, though with finely speckled color pattern. The prebasal preopercular spines on the hind part of the ridge of the suborbital stay are not always distinct.

2793. D. 5353. Cape Melville Light, S. 85° E., 16.8 miles (N. lat. 7° 50' 45", E. long. 116° 43' 15"), Balabac Strait. Dn 148 fathoms. January 1, 1909. Length 211 mm.

U. S. N. M., No. 59666. Urado, Japan. May 10, 1903. Dr. H. M. Smith. Length 228 mm.

U. S. N. M., No. 59667. Uchinoura Bay, east of Kagashima Baby, Japan. May 1901. Dr. H. M. Smith. Length 320 mm. end of caudal broken. Dried specimen.

D667

~~Leanthor~~ Satyrichthys

~~Peristedion~~ Lalei (Day)

thus

Peristedion Lalei Day, Fishes of India, Suppl., p. 791, 1888 (type locality, Galle, Ceylon; on Peristethus Haly, The Taprobanian, vol. 1, p. 165, 1886); Fauna of British India, Fishes, vol. 2, p. 242, 1889. — Weber, Siboga Exped., vol. 57, p. 513, 1913 (reference).

¶ Peristedion Lalei

¶ Peristethium halyi Alcock, Cat. Deep Sea Fish. Indian Mus., p. 68, 1899 (diagnosis in key).

Rostral extensions short, their length 3½ in space between their extremity and front edge of orbit. Pair of spines on occiput, on either side of which low ridge terminated by small spine. Opercular ridge forms strong spine. Lower jaw with barbels.

Scales 34 in lateral line.

D. VII, 15; A. 15; ventral I, 5. Uniform red. (day.)

Galle.

~~Cecanthoi~~ Satyrichthys

~~Peristedion~~ adeni (Lloyd)

Peristethus adeni Lloyd, Rec. Indian Mus., vol. 1, pt. 1, pp. 5, 8, 1907 (type locality, Gulf of Aden, in 130 fathoms); Illustrat. Zool. Investigator, pt. 9, pl. 43, figs. 1–1a, 1908 (type); Mem. Indian Mus., pt. 10, p. 164, Aug. 1909 (type).

Peristedion adeni Gilchrist, Fisher. Marine Surv. South Africa, Rep. no. 2, pt. 3, p. 78, 1922 (off Natal, 62 to 207 fathoms).—

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 77, p. 256, 1925 (Natal coast, 33 fathoms); vol. 86, p. 488, 1934 (S. lat. 29°44', E. long. 31°23'34", in 120 fathoms).

— Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 945, Oct. 1927 (Natal).— J. L. B. Smith, Trans. Roy. Soc. South Africa, vol. 22, p. 331, pl. 22 (photographs), 1934 (Natal).— Fowler, op. cit.,

depth 5 1/4; head 2 1/4, width 1 1/2. Snout 1 1/2 in head; eye 7, 4 in snout, 1 1/10 in interorbital; maxillary extends 3/4 in snout to eye, expansion 2 1/10 in eye, length 3 in head; mental barbel 3 1/6 in head, with numerous tentacles; interorbital 6 2/3 in head. Gill rakers 4 + 18, lanceolate. Preopercular spine little longer than eye.

Lateral scales 22 + 3 in lateral line; 4 rows transversely.

D. VIII, 14, second spine 3 2/3 in head, fifth ray 4 1/8; A. 15, fifth ray 5 1/2; caudal 2 3/4, little convex behind; pectoral 2 1/2; ventral 2 1/4.

Largely pale wood brown, gill opening, breast and pectoral neutral gray. Iris pale

Depth 5 3/5; head 2 2/5, width 1 1/3. Snout 1 4/5 in head; eye 6 1/2, 3 4/5 in snout, 1 1/4 in interorbital; maxillary extends 3/4 of snout; mandibular barbel reached 1 3/4 to ventral; mouth 2 2/3 in head; interorbital 5, strongly concave. Rostral extensions convergent, each elongately triangular, length 1 3/4 in rest of snout & eye, basal width equals interspace, small spine on each supraorbital ridge at forward boundary of crown, triangular spine at middle of forehead and 2 others on snout, in front of each eye at base of supraorbital ridge smaller spine.

slaty. Pinnous dorsal edge narrowly blackish. ~~Length 250 mm~~

Natal.

C.N.H. S.P., one example. Natal. H. W. Bell Marley. Length 250 mm.

2680

~~Subgenus~~ Genus Scalicus Jordan

Differs from subgenus Peristedion in the broad shield-like head, due largely to the expanded or extended keel of the suborbital stay.

Scalicus Jordan, Stanford Publications, vol. 3, p. 216, 1923. (Type Peristedion amiscus Jordan and Starks = Peristedion liams Gilbert and Cramer, orthotypic.)

Analysis of Species

a.¹ Interspace of rostral extension narrow. welchi ~~nesiotes~~.

a.² Interspace of rostral extension broader. liams.

Scalicus

~~Peristedion~~ welchi (~~Herre~~)

Peristedion welchi Herre, Philip-
pine Journ. Sci., vol. 27, p. 292,
pl. 1, 1925 (type locality,
Dumaguete, Oriental Negros, 6 to 8
meters).

Depth 4 1/2 (measured from snout tip inside rostral extensions); head 2 1/3, width 1 1/5. Snout 2 in head; eye 5 1/3, 2 3/4 in snout, 1 1/5 in interorbital; maxillary extends 3/4 to eye, length 3 in head; mouth width 2 1/2; barbel 1 7/8, with 10 pairs of filaments; 2 pairs anteriorly each side of lower mental filaments and 3 filaments on the inner edge of each mandibular ramus or chin; mouth edentulous; interorbital 4 1/5 in head; low and flattened medially, superciliary ridges elevated. Gill rakers 7+18, of which 3 of

upper and 8 lower low rudiments,
1½ in gill filaments, which
3 in eye.

Pair of broad, flattened,
rounded rostral extensions,
but slightly longer than eye
and interspace half basal
width of either extension; ½
rather blunt postero-supra-
orbital spines, upper larger
and slightly in advance,
and behind with short groove
above upper postocular; keel
extends back to form ½ large
occipital spines, wide set,
and little before smaller
suprascapular spine each side;
opercular spine level with
lower eye edge, small, keel
forward to but little shorter

than eye; preopercle ends in rather slender, small spine, 1 1/3 in eye; ridge of suborbital stay as broad, expanded flange, edge sharp keel, ends in spine behind long as eye and reaches 1/4 in depressed pectoral.

bony lateral plates

From above gill opening 28 + 1s;; 4 rows of diminishing spiniferous plates on trunk ~~with of which an additional~~ row on under side of tail; spines all large and strong and surfaces of plates rugose; front pair of plates on belly twice as long as posterior pair close before vent; row of 3 small plates, each bearing horizontal keel above gill opening and vertical row behind gill opening also

of 3 small plates.

D. VII, 15, third spine 4 1/5 in head, third ray 3 3/5; A. 15, third ray 4 3/5, caudal 2 2/5, concave behind; least depth of caudal peduncle 2 1/8 in eye; pectoral 2 2/5 in head, rays I, 10 — II, uppermost detached ray 2 1/3 in head; ventral 1 7/8, rays I, 5.

Uniform brownish. Iris grayish. Fins all more or less dark brown, especially outer part of first dorsal and upper section of pectoral.

L. S. I. M., 20.

Albatross Collection (10124).

D. 5503. Macabalan Point Light (Mindanao), S. 31° E., 6.6 miles (N. lat. 8° 36' 26", E. long. 124° 36'

8"), northern Mindanao vicinity.
In 226 fathoms. August 4, 1909.
Length 229 mm. ~~Type.~~

2305. D.5402. Capitancillo Island Light, S. 37° W., 16.1 miles (N. lat. 11° 11' 45", E. long. 124° 15' 45"), between Leyte and Cebu. In 188 fathoms. May 16, 1909. Length 158 mm.

D.5403. 3670, 24181 to 24190. Capitancillo Light, S. 46° W., 15.7 miles (N. lat. 11° 10', E. long. 124° 17' 15"), between Leyte and Cebu. In 182 fathom. May 16, 1909. Length 128 to 184 mm.

~~3870, 24181 to 24190.~~

1872, 1873, 1885. D.5247. Dammalag Island (S.), S. 78° W., 3.8 miles (N. lat. 7° 2', E. long. 125° 38' 45"), Gulf of Davao. In 135 fathoms. May 18, 1908. Length 89 to 109 mm.

3952, 3954. D.5194. Chocolate Island, N. 66° W., 8 miles (N. lat. 11°15'30", E. long. 124°11'), off northern Cebu Island. In 148 fathoms. April 3, 1908. Length 110 to 126 mm.

1993. D.5222. Van Cendrea Island (W.), S. 57° E., 9.20 miles (N. lat. 13°38'30", E. long. 121°42'45"), between Marinduque and Luzon. ~~Length~~ In 195 fathoms. April 24, 1908. Length 166 mm.

3050 to 3058. D.5411. Lauis Point Light, N. 35° E., 4.7 miles (N. lat. 10°10'30", E. long. 123°51'15"), between Cebu and Bohol. In 145 fathoms. May 23, 1909. Length 94 to 143 mm.

3085 to 3087. D. 5412. Lanuza Point Light, N. 21° E., 5.5 miles (N. 10° 9' 15", E. long. 123° 52'), between Cebu and Bohol. In 162 fathoms. March 23, 1909. Length 135 to 147 mm.

3801 to 3803. D. 5517. Point Tagolo Light, S. 83° W., 10.5 miles (N. lat. 8° 45' 30", E. long. 123° 33' 45"), northern Mindanao and vicinity. In 169 fathoms. August 9, 1909. Length 59 to 97 mm.

Acalicus
~~Peristedion~~ hians Gilbert and Cramer

Peristedion hians Gilbert and Cramer,
Proc. U. S. Nat. Mus., vol. 19, p. 419,
pl. 41, figs. 1-2, 1897 (type
locality, Hawaiian Islands,
in 295 to 343 fathoms). —
Gilbert, Bull. U. S. Fish Comm.,
vol. 23, pt. 2, p. 638, 1903 (1905)
(off Molokai; Pailolo Channel;
south of Oahu; Kauai; Niihau;
in 165 to 459 fathoms). —
Weber, Siboga Exped., vol. 57,
Fische, p. 513, 1913 (reference).
— Fowler, Mem. Bishop Mus.,
vol. 10, p. 302, 1928 (type; Hawaii).

2690

Peristedium hians Brauer, Deutsch.
Tiefsee-Exped. Valdivia, vol. 15;
Fische, p. 402, 1906 (reference).

Peristedion micronema

Peristethus micronema Günther, Rep. Voy. Challenger, vol. 22, p. 65, 1887 (reference).

Peristedion amiscus Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 593, pl. 3, figs. 1–3, 1902 (1904) (type locality, Sagami Bay, Japan, in 280 meters). — Weber, Siboga Exped., vol. 57, Fische, p. 513, 1913 (reference).

Like ~~Scalicups Forbesian~~ ~~welchi~~ ~~sarasinorum~~ (Here ~~Forbes~~ but that species with the margin of the suborbital stay forming lateral profile of head, as viewed from above, more sinuous). Inter-space between the nostril extensions constantly much narrower in large and small specimens of both species. Altogether the head is wider in the Philippine species. In small specimens of P. liana the margins of the suborbital ridge, as seen from above show 2 blunt spines, one opposite the front eye edge and the other opposite the hind eye edge. In the Philippine fish there is a very broad, obtuse

angle opposite the hind eye edge but hardly a distinct spine well set off. These specimens also have little if any trace of the small supra-preopercular spine, though in the adult of the Philippine fish it is greatly developed. I am unable to distinguish the nominal Peristedion amiscus.

~~4773~~.
U. S. N. M., No. 47730. Hawaii. Albatross Collection 3472. Length 144 mm. Type.
Also 6 others, same data, paratypes. Length 105 to 187 mm.
U. S. N. M., No. 51428. Sagami Bay. In 153 fathoms. May 5, 1900. Albatross Collection 3698. Length 102 mm. Type of Peristedion amiscus,